ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	IB Docket No. 96-132
Establishing Rules and Policies for the	)	
Use of Spectrum for Mobile Satellite	)	
Service in the Upper and Lower L-band	)	

To: The Commission

REPLY COMMENTS OF LOCKHEED MARTIN CORPORATION

Lockheed Martin Corporation ("Lockheed Martin"), by its attorneys, hereby submits its reply comments in the above-referenced proceeding to address the proposed assignment of lower L-band spectrum to AMSC Subsidiary Corporation ("AMSC") for the delivery of mobile-satellite service ("MSS").[1/]

The initial comments in this proceeding confirmed that automatically granting AMSC priority access to lower L-band spectrum would not be in the public interest. L-band spectrum is a limited resource in high demand that should be assigned to operators who demonstrate they can use the spectrum more efficiently to provide high quality consumer services. Scarce spectrum availability requires more efficient use of L-band spectrum. Accordingly, the Commission should evaluate alternative means to implement MSS technology in the United States, including the licensing of additional MSS operators. Permitting the entry of other competitors using advanced technology for more efficient spectrum use will afford the public greater consumer choice, lower prices and higher quality MSS service.

1/ *See* Notice of Proposed Rulemaking in the Matter of Establishing Rules and Policies for the Use of Spectrum for Mobile Satellite Service in the Upper and Lower L-band, IB Docket No. 96-132 (rel. June 18, 1996) ("*Notice*"); *see also* Letter from Thomas S. Tyzc, Chief, Satellite and Radiocommunication Division, International Bureau to Lon C. Levin, Vice President and Regulatory Counsel, AMSC Subsidiary Corporation (dated September 5, 1996).

INTRODUCTION

In the *Notice*, the Commission proposes to grant priority to AMSC for obtaining spectrum in the lower L-band to the exclusion of all other applicants unless and until AMSC's spectrum threshold is met.[2/] The Commission bases this proposal on the inability to coordinate internationally 28 MHz of spectrum for AMSC's use in the upper L-band.[3/] However, as Lockheed Martin and other commenters have observed, the award of 28 MHz of spectrum to one MSS system is not required by law or regulation. Moreover, allocation of all available L-band spectrum to a single MSS operator would ignore technological advances that make an exclusive assignment of 28 MHz of spectrum to a single MSS provider unnecessary.[4/]

Although the Commission initially authorized AMSC to use 28 MHz of spectrum, that authorization was based on technological capabilities existing over a decade ago. Today, MSS systems are capable of much more spectral efficiency due to major advances in satellite technology. This evolution cannot be ignored -- and, indeed, must affirmatively be taken into account -- in today's spectrum decisions that will affect the future development of satellite services in the United States. This proceeding opens the opportunity for the Commission to: (1) embrace policies that foster competition; (2) improve the quality of MSS service through the

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2/ *Id.* at ¶11.

3/ *Id.* at ¶9.

4/ *See Comments of Lockheed Martin Corporation* at 9 (recognizing that 10 MHz of MSS spectrum can support the delivery of fully operational two-way MSS service); *Comments of L/Q Licensee, Inc.* at 6; *Comments of Motorola* at 8; *Reply Comments of RSC* at 3, attachment (Second Generation Land Mobile Satellite Service Spectrum Requirements, Oct. 31, 1986 report).

implementation of state-of-the-art technologies; and (3) give U.S. consumers real choices from a varied menu of communications products and services.

LOWER L-BAND SPECTRUM ASSIGNMENTS SHOULD CONSIDER MSS SPECTRUM EFFICIENCY

While every Commission license should "carry with it some reasonable expectation that it will permit the holder to implement its system,"[5/] this expectation does not compel the Commission to assign new spectrum automatically to existing operators or preclude consideration of technological advances that promote more efficient use of spectrum resources. More efficient use of available spectrum would reduce AMSC's MSS spectral requirements. To date, AMSC has failed to justify its need for spectrum in the lower L-band or to support its claim that it can use additional spectrum efficiently. AMSC has provided no recent data regarding subscriber levels supported by MSS spectrum already assigned and coordinated; nor has AMSC explained how it has tried to enhance its system efficiency to minimize its demand for MSS spectrum. Prior to taking the drastic step of assigning more L-band spectrum exclusively to AMSC, the FCC should confirm whether efficient use of spectrum by AMSC would significantly minimize AMSC's spectrum requirements. As noted in the comments, this can be done by the implementation of new MSS technologies and through improvements to AMSC's partially deployed MSS system.

Other than AMSC's bare assertion that it can make "efficient use" of lower L-band spectrum,[6/] AMSC provides no support for the required public interest finding that newly-

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5/ *See Comments of AMSC* at 5, quoting the *Notice* at ¶14.

6/ *See Comments of AMSC* at 5.

awarded L-band spectrum will be used efficiently. While AMSC stresses the ability to "increase its spectrum efficiency by reusing the same spectrum in its Central and Alaska/Hawaii beams,"[7/] an analysis of the technical operation and coverage of AMSC's system demonstrates that this limited form of frequency re-use does not reflect significant spectral efficiency. Indeed, AMSC's current configuration only provides for a relatively small amount of frequency re-use in contrast to the re-use capabilities of MSS systems being developed and deployed today in other countries.

The FCC should not assign AMSC additional spectrum without first investigating other possible solutions for improving AMSC's technology and for making its MSS system substantially more spectrally efficient.[8/] Automatically assigning additional L-band spectrum to AMSC is simply not justified based on the record of this proceeding. Until appropriate showings are made to warrant an award of more spectrum to AMSC, the FCC should refrain from assigning valuable lower L-band spectrum to AMSC when other operators stand ready to offer competitive MSS services based on state-of-the-art satellite technology.

Finally, to support its claim for priority access to the lower L-band, AMSC asserts that "[n]o other system or potential system is in a position to use the spectrum."[9/] Additional systems, however, have never been proposed because the Commission has refused to permit any entity

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7/ *See Comments of AMSC* at 6.

8/ *See Final Report*, Radiocommunication Bureau, Region 2 Forum on Resolution 18, Brasilia, 7-9 August 1996 at 17 (recognizing general agreement that "advanced technologies in the implementation of space systems improves orbit/spectrum efficiency and facilitates sharing").

9/ *See Comments of AMSC* at 6.

other than AMSC to apply for these frequencies.[10/] Thus, only AMSC is authorized to provide MSS service in the United States. The FCC's decision not to solicit applications for lower L-band frequencies does not support or justify the proposed spectrum assignment to AMSC. Current MSS technologies permit the deployment of viable MSS systems with much less spectrum than claimed by AMSC, such as Lockheed Martin's ACeS system being deployed in Asia.[11/] The Commission should, therefore, make lower L-band spectrum available to other potential MSS operators who would deploy competitive MSS networks.[12/] Indeed, given the public benefits that derive from competition, it is critical that the FCC now license multiple MSS systems to serve the U.S. market. Doubtless other industry players will seek FCC approval to implement advanced MSS systems in the United States if the Commission permits other applicants to file for this L-band spectrum.

OPENING THE DOMESTIC MSS MARKETPLACE TO COMPETITION WILL SERVE THE PUBLIC INTEREST

With the exception of AMSC, commenters in this proceeding overwhelmingly oppose giving AMSC priority access to lower L-band spectrum. To date, AMSC's system has not fulfilled the expectations that supported its licensing in 1987. Only one of three scheduled satellites has been launched and is operational. Moreover, large areas of the country that were intended to be the principal beneficiaries of domestic MSS capabilities remain unserved ten

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10/ *See Comments of Rural Telecommunications Group* at 6; *Comments of Motorola* at 12.

11/ *See Comments of Lockheed Martin* at 7-9.

12/ *See Reply Comments of RSC* at 3, Attachment (Second Generation Land Mobile Satellite Service Spectrum Requirements); *Comments of Motorola* at 8-9; *Comments of L/Q Licensee* at 9.

years after AMSC's licensing.[13/] These regions would benefit immediately from opening the lower L-band for use by competitive geostationary MSS operators.

A number of parties recognize that it would be contrary to FCC policies, and to the spirit of the interim international agreement recently signed in Mexico City, for the Commission to deprive U.S. consumers of the benefits of state-of-the-art technology by "impos[ing] AMSC's brand of MSS service on all domestic users."[14/] As L/Q Licensee correctly observes, "[i]n adopting rules governing satellite services and in granting space station authorizations, the Commission has historically adhered to an 'open skies' policy based on its conclusion that a competitive marketplace operates more efficiently than a monopolistic one."[15/] An FCC decision to assign available spectrum to additional licensees is consistent with its mandate to foster competition in the delivery of all telecommunications services.[16/]

Indeed, as discussed in Lockheed Martin's initial comments, opening the domestic MSS market to greater competition would reinforce ongoing efforts by both Congress and the Commission to provide consumers greater choice among telecommunications service

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13/ *See Reply Comments of Radio Satellite Corporation* at 8 (recognizing that AMSC serves only 15,500 subscribers out of the 300,000 its system was supposedly designed to support).

14/ *See e.g. Comments of Comsat* at 4; *Comments of L/Q Licensee, Inc. and Opposition to Proposed Modification of License* at 3-11; *Comments and Opposition of Motorola Satellite Communications, Inc. and Iridium LLC* at 10-12; *Report No. IN96-16*, "FCC Hails Historic Agreement on International Satellite Coordination" (released June 25, 1996).

15/ *See Comments of L/Q Licensee* at 3; *see also Comments of Lockheed Martin* at 10.

16/ *See* The Telecommunications Act of 1996, Pub.L.No. 104-104, 110 Stat. 56, *to be codified at* 47 C.F.R. §§ 151 *et seq.*

providers.[17/] It also would encourage efficient use of spectrum resources by promoting improved technologies that offer increased system capacity and that afford higher quality communications services. As the Commission recognized as early as 1972, providing for multiple entry in the domestic satellite marketplace encourages service and technical innovation, and provides an impetus for efforts to minimize cost and charges to the public.[18/] The benefits of a pro-competitive MSS policy -- better service, lower costs and wider consumer choices -- should be considered by the Commission in adopting policies for the future licensing of lower L-band frequencies. Accordingly, rather than arbitrarily assigning lower L-band spectrum to AMSC, the Commission should license the spectrum in a manner that promotes competition which would encourage operators to develop efficient, cost-effective, and technologically advanced MSS in the United States.

Moreover, for reasons set forth in Lockheed Martin's initial comments, the Commission should adopt measures to enable other interested MSS proponents to participate in future international L-band coordinations.[19/] Providing for broader participation in the negotiation process, as well as in the domestic MSS marketplace, will serve the public interest by enhancing U.S. opportunities for more favorable international MSS spectrum allocations. In turn, domestic users of MSS service will benefit as multiple MSS operators compete to offer consumers high quality, state-of-the-art, reliable MSS service.

17/ *See Comments of Lockheed Martin* at 10-15.

18/ *See Domestic Communications-Satellite Facilities*, 35 FCC 2d 844, 38 FCC 2d 665 (1972).

19/ *See Comments of Lockheed Martin* at 15-17.

CONCLUSION

Consistent with these recommendations, Lockheed Martin urges the Commission to make lower L-band spectrum available for competing domestic MSS service providers and to encourage broader participation of MSS proponents in future international coordination negotiations and proceedings.

Respectfully submitted,

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DECLARATION

I am the technically qualified person contributing to the preparation of the foregoing Reply Comments of Lockheed Martin Corporation. I am familiar with the technical parameters discussed therein and declare that facts contained in the Reply Comments, except those as to which official notice may be taken, are true and correct to the best of my knowledge, information and belief.

Signed this 4 day of October 1996

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CERTIFICATE OF SERVICE

I, V. Lynne Lyttle, a secretary at Dow, Lohnes & Albertson, do hereby certify that on this 7th day of October, 1996, copies of the foregoing "Reply Comments of Lockheed Martin Corporation" were sent via first class mail, postage pre-paid, to the following:

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